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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,807

09/30/2003

Mark R. Harless

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MINNEAPOLIS, MN 55402

EXAMINER

KASSA, YOSEF

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/675,807	HARLESS ET AL.	
	Examiner	Art Unit	
	YOSEF KASSA	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-35 is/are allowed.
- 6) ☒ Claim(s) 1-25, 27, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings Correction

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Examiner can not able to read some of the block descriptions in Figs. 1-3. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25, 27, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy (U.S. Patent 5,125,035), and further in view of Shinada et al (U.S. Patent 6,559,663).

With regard to claim 1, McCarthy discloses (a theta-theta) coordinate stage that includes a rotary arm drive and a rotatable platform, wherein an object to be imaged is placed on the rotatable platform (please refer to col. 3, lines 7-19);
an imaging system (refer to video camera 47 in Fig. 1);

an image rotator (refer to rotating table 30 in Fig. 1); and
a control system coupled to the (theta-theta) coordinate stage and the image rotator, wherein the control system controls the image rotator (refer to col. 3, lines 7-14) and causes the image rotator to rotate an image to compensate for rotation of the rotatable platform and preserve orientations of features in the image (refer to col. 4, lines 16-30).

McCarthy does not disclose expressly for a theta-theta coordinate stage. However, at the same field of endeavor, Kurihara discloses this feature (please refer to col. 5, lines 33-38). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching Kurihara image detecting system into McCarthy system. The suggestion/motivation for doing so would have been to provide a stage moving on the x-y plane and rotated around the theta axis (please refer to col. 3, lines 44-48 of Kurihara). Therefore, it would have been obvious to combine Kurihara with McCarthy to obtain the invention as specified in claim 1.

With regard to claim 2, McCarthy discloses wherein the control system applies control signals to the theta-theta coordinate stage to control movement of the object and applies control signals to the image rotator to compensate for the rotation of the object (refer to col. 3, lines 41-55).

With regard to claim 3, McCarthy discloses further comprising an operator interface including a monitor for viewing the image (refer to col. 4, lines 16-26).

With regard to claim 4, McCarthy discloses wherein the operator interface further comprises a control coupled to send to the control system commands indicating a desired motion of the image viewed on the monitor (refer to col. 4, lines 16-26).

With regard to claim 5, McCarthy discloses wherein the rotatable platform has a rotation axis that intersects a rotary drive axis (refer to Fig. 1, items 30 and 35).

With regard to claim 6, McCarthy discloses an optic axis of the imaging system is moved along the axis of one of the rotary drives or images coincident to one of the rotary axis (refer to col. 2, lines 15-24).

With regard to claim 7, McCarthy discloses a setting of the rotary drive indicates a displacement of the rotary drive relative to a zero displacement position (refer to col. 4, lines 59-64).

With regard to claim 8, McCarthy discloses further comprising an orientation monitoring system that measures an angular displacement of the rotatable platform relative to a zero angular displacement setting (refer to col. 4, lines 65-col. 5, lines 7).

With regard to claim 9, McCarthy discloses further comprising a video camera and a display monitor (refer to Fig. 1, items 47 and 55).

With regard to claim 10, McCarthy discloses wherein the image rotator comprises an image capture and image processing system that captures the image from the video camera and rotates the image by an amount selected by the control system (refer to col. 4, lines 4-26).

With regard to claim 11, McCarthy fail to discloses the imaging system comprises a microscope. However, at the same field of endeavor, Shinada discloses this feature (please refer to col. 13, lines 27-30). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching Shinada microscope imaging system into McCarthy system. The suggestion/motivation for doing

so would have been to provide a microscope image system disposed near electronic optical system (refer to Fig. 1 of Shinada). Therefore, it would have been obvious to combine Shinada with McCarthy to obtain the invention as specified in claim 11.

With regard to claim 15, McCarthy fail to discloses the image rotator comprises software which is capable of rotating a video image from the video camera (refer col. 4, lines 16-30).

Claims 12, 13, 14, 16, 17, 20-22 and 37 are similarly analyzed and rejected the same as claim 11.

Claims 13, 18, 19 and 23 are similarly analyzed and rejected the same as claim 9.

Claim 25 is similarly analyzed and rejected the same as claim 15.

Claims 27 and 36 are similarly analyzed and rejected the same as claim 1.

Reasons for Allowance

3. Claims 28-35 are allowed.

4. The following is an examiner's statement of reasons for allowance. The closest prior art of record failed to teach or suggest, an alignment system including an edge detector and a processing system that identifies a position of the sample from measurements that the edge detector takes while the theta-theta coordinate stage rotates the sample, a measurement system for measuring a physical property of a portion of the sample that the theta-theta coordinate stage moved into a field of view of the measurement system; an imaging system for obtaining an image of a portion of the sample that the theta-theta coordinate stage moved into a field of view of

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the imaging system (refer claim 28); measuring edge locations of the sample while the theta-theta coordinate stage rotates the sample, prealigning the sample by determining the position of the sample from the edge locations, wherein the prealigning determines the position of the sample to a second accuracy, using the theta-theta coordinate stage to move the sample so that a view area of an imaging system contains a first feature, rotating an image formed by the imaging system to compensate for rotation of the sample by the theta-theta coordinate stage, using a pattern recognition module to process the rotated image and identify a first location corresponding to the first feature (refer claims 33-35).

Therefore, in combination with all the other limitations claims 28-35 are allowable.

Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. (6788390), (6421573), (6547409) and (6204471).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSEF KASSA whose telephone number is (571) 272-

7452. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communication and (571) 273-8300 for after Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PATENT EXAMINER

Yosef Kassa

07/24/2007.

A handwritten signature in black ink, appearing to read 'Y. Kassa', with a long horizontal stroke extending to the right.